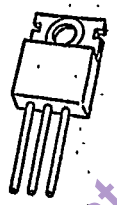
DIGITRON

092386

Reference No. SA01TY23

DGE

new/art DGE 092386

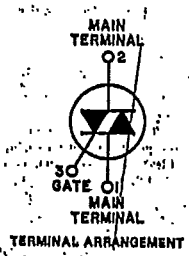


Triacs

6A to 15A RMS Up to 600 Volts
Isolated and Non-Isolated Tab

ISOLATED TAB
SC140
SC142
SC147
NON-ISOLATED TAB
SC141
SC143
SC146
SC149
SC151

TYPE	RMS ON-STATE CURRENT, $I_{T(RMS)}$(1)	REPETITIVE PEAK OFF-STATE VOLTAGE, V_{DRM}(2)				PEAK ONE FULL CYCLE SURGE (NON-REP) ON-STATE CURRENT, I_{TSM} AMPERES		I^2t FOR FUSING FOR TIMES AT(3)	
	AMPERES	B	D	E	M	50 Hz	60 Hz	(RMS AMPERE)² SECONDS 1.0 MILLISECOND	(RMS AMPERE SECONDS, 8. MILLISECONI
		VOLTS	VOLTS	VOLTS	VOLTS	AMPERES	AMPERES		
ISOLATED TAB									
SC140	6.5	200	400	500	600	74	80	18	26.5
SC142	8	200	400	500	600	104	110	20	50
SC147	10	200	400	500	600	104	110	20	50
NON-ISOLATED TAB									
SC141	6	200	400	500	600	74	80	18	26.5
SC143	8	200	400	500	600	110	120	20	60
SC146	10	200	400	500	600	110	120	20	60
SC149	12	200	400	500	600	110	120	20	60
SC151	15	200	400	500	600	110	120	20	60



TERMINAL ARRANGEMENT

ISOLATED TAB	NON-ISOLATED T
SC140, 2, 7	SC141, 3, 6, 9, SC

CHARACTERISTICS

TEST	SYMBOL	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
Repetitive Peak Off-State Current	I_{DRM}				mA	V_{DRM} = Maximum Allowable Repetitive Off-State Voltage Rating Gate Open Circuited
		–	–	0.1		T_C = +25°C
		–	–	0.5		T_C = +100°C
Peak On-State Voltage	V_{TM}				Volts	T_C = +25°C, I_{TM} = 1 msec., Wide Pulse, Duty Cycle ≤ 2%
SC140		–	–	1.85		I_{TM} = 9.2 A Peak
SC141		–	–	1.83		I_{TM} = 8.5 A Peak
SC142		–	–	1.75		I_{TM} = 11.3 A Peak
SC143		–	–	1.55		I_{TM} = 11.3 A Peak
SC146		–	–	1.65		I_{TM} = 14 A Peak
SC147		–	–	1.50		I_{TM} = 14 A Peak
SC149		–	–	1.65		I_{TM} = 17 A Peak
SC151		–	–	1.52		I_{TM} = 21 A Peak
Critical Rate-of-Rise of Off-State Voltage (Higher values may cause device switching)	dv/dt				Volts/μsec	T_C = +100°C, Rated V_{DRM} Gate Open Circuited Exponential Voltage Waveform
SC140, SC141		30	100	–		
SC142, SC143		50	150	–		
SC146, SC147		100	150	–		
SC149		100	200	–		
SC151		100	250	–		
Critical Rate-of-Rise of Commutating Off-State Voltage (Commutating dv/dt)	dv/dt(c)	4	–	–	Volts/μsec	$I_{T(RMS)}$ = Rated Maximum Allowable RMS On-State Current, V_{DRM} = Maximum Rated Peak Off-State Voltage, Gate Open Circuited.
DC Gate Trigger Current	I_{GT}				mAdc	V_D = 12 Vdc
						TRIGGER MODE / R_L / T_C
		–	–	50		MT2+ Gate + / 100 Ohms / +25°C
		–	–	50		MT2– Gate – / 100 Ohms / +25°C
		–	–	50		MT2+ Gate – / 50 Ohms / +25°C
		–	–	80		MT2+ Gate + / 50 Ohms / -40°C
		–	–	80		MT2– Gate – / 50 Ohms / -40°C
		–	–	80		MT2+ Gate – / 25 Ohms / -40°C
DC Gate Trigger Voltage	V_{GT}				Vdc	V_D = 12 Vdc
						TRIGGER MODE / R_L / T_C
		–	–	2.5		MT2+ Gate + / 100 Ohms / +25°C
		–	–	2.5		MT2– Gate – / 100 Ohms / +25°C
		–	–	2.5		MT2+ Gate – / 50 Ohms / +25°C
		–	–	3.5		MT2+ Gate + / 50 Ohms / -40°C
		–	–	3.5		MT2– Gate – / 50 Ohms / -40°C
		–	–	3.5		MT2+ Gate – / 25 Ohms / -40°C
DC Gate Non-Trigger Voltage	V_{GD}	0.2	–	–	Vdc	TRIGGER MODE / R_L / T_C
						MT2+ Gate + / 1000 Ohms / +100°C
						MT2– Gate – / 1000 Ohms / +100°C
						MT2+ Gate – / 1000 Ohms / +100°C
						MT2– Gate + / 1000 Ohms / +100°C

ISOLATED TAB	NON-ISOLATED TAB
SC140, 2, 7	SC141, 3, 6, 9, SC151

CHARACTERIST

TEST	SYMBOL	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
DC Holding Current	I_H				mAdc	Main Terminal Source Voltage = 24 Peak Initiating On-State Current = 0.1 milliseconds to 10 milliseconds wide pulse, Gate Trigger Source = 20 Ohms.
		–	–	50		T_C = +25°C
		–	–	100		T_C = -40°C
DC Latching Current	I_L				mAdc	Main Terminal Source Voltage = 24 Gate Trigger Source = 15V, 100 O 50μsec pulse width, 5 μsec rise an times maximum
						TRIGGER MODE / T_C
		–	–	100		MT2 + Gate + / +25°C
		–	–	100		MT2 – Gate – / +25°C
		–	–	200		MT2 + Gate – / +25°C
		–	–	200		MT2 + Gate + / -40°C
		–	–	200		MT2 – Gate – / -40°C
		–	–	400		MT2 + Gate – / -40°C
Steady State Thermal Resistance	$R_{\theta JA}$	–	–	75	°C/Watt	Junction-to-Ambient
Steady State Thermal Resistance	$R_{\theta JC}$				°C/Watt	Junction-to-Case This characteristic is useful as an acceptance test at an incoming inspection station.
SC140		–	–	3.1		
SC141		–	–	3.0		
SC142		–	–	3.3		
SC143		–	–	3.2		
SC146		–	–	2.2		
SC147		–	–	2.5		
SC149		–	–	2.0		
SC151		–	–	2.0		
Apparent Thermal Resistance	$R_{\theta JC(ac)}$				°C/Watt	Junction-to-Case This characteristic is useful in the calculation of junction temperatur rise above case temperature for AC current conduction.
SC140		–	–	2.04		
SC141		–	–	2.22		
SC142		–	–	2.31		
SC143		–	–	1.97		
SC146		–	–	1.50		
SC147		–	–	1.69		
SC149		–	–	1.52		
SC151		–	–	1.10		